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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,498	11/24/2003	James A. Hunter	10021.003020 (P0043)	4571

31894 7590 05/17/2006

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EXAMINER	
TSAI, H JEY	

ART UNIT	PAPER NUMBER
2812	

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/720,498	HUNTER ET AL.	
	Examiner	Art Unit	
	H.Jey Tsai	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-12 and 14-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-12 and 14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 5-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franke et al. 6,448,622 in view of Dreschel et al. 6,773,401, newly cited.

Franke et al. teaches a method of fabricating an integrated device, the method comprising:

forming a plurality of transistors of an integrated device having gate, source/drain, fig. 1, 15, col. 4, lines 26-67, col. 9, line 38-67,

forming a protective laver 225 over the plurality of transistors after the plurality of transistors is formed, fig. 1 and 15,

forming a capacitive micromachined transducer (a resonator 1510 or a movable element 505) over the protective layer, the transducer including a membrane that is formed using a high temperature process (at about 650 for poly-SiGe, col. 5, lines 14-16 or poly-si at 900 C, col. 4, table 1), the plurality of transistors and the transducer being formed on a same substrate,

forming an interconnect line electrically coupling the transducer and a transistor in the plurality of transistors, fig. 15 or 7-13,

using LPCVD process, col. 3, lines 15-40,

suspending the movable element over a bottom electrode, fig. 15 or 13,

The difference between the references applied above and the instant claim(s) is: Franke et al. teaches forming a movable element for a capacitor transducer (a movable element or resonator) to generate frequency response but does not teach the specific frequency at ultrasonic range. However, Dreschel et al. teaches at abstract, col. 10, lines 35-67, forming a ultrasonic system with a movable element to generate ultrasonic frequency.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above references' teachings by using applying the specific voltage to the movable element or resonator so that the frequency would be in the ultrasonic range as taught by Dreschel et al. because frequency response of a movable element is corresponding to applied voltage.

Claims 1, 3, 5-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshino 4,571,661, previously applied. In view of Franke et al. 6,448,622, newly cited.

Hosino discloses a method of fabricating an integrated device, the method comprising:

forming a transistor of an integrated device 26/26, fig. 2A,

forming a first protective layer 22 over the transistor,

forming a micro-electro-mechanical system (MEMS) structure over the first protective layer 22, the MEMS structure including a movable element 20 (silicon nitride) that is formed using a deposition process at a temperature of at least about 700 C, col. 4, lines 33-47,

wherein the movable element 20 comprises a membrane of a capacitive micromachined ultrasonic transducer (CMUT), col. 2, 40-55,

wherein the integrated device comprises a wherein the deposition process comprises low-pressure chemical vapor deposition (LPCVD), col. 4, 33-47,

suspending the movable element 20 over a bottom electrode 24,

interconnection line 42, 44 by sputtering and low temperature process, fig. 3 col. 3, lines 33-55,

etching layer 20 to form capacitive sensor, fig. 3.

Note: patentable weight is not given to the intended use of capacitive sensor in ultrasonic application. The claimed using capacitive movable element sensor for ultrasonic application differs from prior art second capacitor plate only its claimed intended use (for electrically floating). However, the manner or method of use of a machine isn't germane to the patentibility of the machine and process of making itself. A statement of intended use does not distinguish the process of making and structural apparatus claimed over the prior art ref. Ex parte Cullis, 11 USPQ2d 1876 (BPPAI)

The difference between the references applied above and the instant claim(s) is: Hosino et al. teaches forming a movable element for a capacitor transducer (a movable element or resonator) but does not teach forming protective layer over the transistor.

However, Franke et al. teaches at fig. 13 and 15, forming a protective layer 225 over the transistor.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above references' teachings by forming a protective layer over the transistor as taught by Franke et al. because the MEMS device can be indirectly connected to the transistor through opening in the protective layer.

Conclusions

Applicant's arguments filed Feb. 13, 2006 have been fully considered but they are not persuasive. Because newly cited reference clearly teaches forming a protective layer over the transistors as set forth above.

Any inquiry of a general nature or clerical matters or relating to the status of this application or proceeding should be directed to the customer service whose telephone number is (703) 308-4357.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Jey Tsai whose telephone number is (571) 272-1684. The examiner can normally be reached on from 7:00 Am to 4:00 Pm., Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873.

The fax phone number for this Group is 571-273-8300.

hjt

5/8/2006

H. Jey Tsai
Primary Examiner
Patent Examining Group 2800